

A Critique of *Brave New World*



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BLTC Research, 1998 (last updated 2004)
<http://www.huxley.net/index.html>

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Brave New World (1932) is one of the most bewitching and insidious works of literature ever written.

An exaggeration?

Tragically, no. Brave New World has come to serve as the false symbol for any regime of universal happiness.

For sure, Huxley was writing a satirical piece of fiction, not scientific prophecy. Hence to treat his masterpiece as ill-conceived futurology rather than a work of great literature might seem to miss the point. Yet the knee-jerk response of 'It's Brave New World!' to any blueprint for chemically-driven happiness has delayed research into paradise-engineering for all sentient life.

So how does Huxley turn a future where we're all notionally happy into the archetypal dystopia? If it's technically feasible, what's wrong with using biotechnology to get rid of mental pain altogether?

Brave New World is an unsettling, loveless and even sinister place. This is because Huxley endows his 'ideal' society with features calculated to alienate his audience. Typically, reading BNW elicits the very same disturbing feelings in the reader which the society it depicts has notionally vanquished - not a sense of joyful anticipation.

Thus BNW doesn't, and isn't intended by its author to, evoke just how wonderful our lives could be if the human genome were intelligently rewritten. In the era of post-genomic medicine, our DNA is likely to be spliced and edited so we can all enjoy life-long bliss, awesome peak experiences, and a spectrum of outrageously good designer-drugs. Nor does Huxley's comparatively sympathetic account of the life of the Savage on the Reservation convey just how nasty the old regime of pain, disease and unhappiness can be. If you think it does, then you enjoy an enviably sheltered life and an enviably cosy imagination. For it's all sugar-coated pseudo-realism.

In Brave New World, Huxley contrives to exploit the anxieties of his bourgeois audience about both Soviet Communism and Fordist American capitalism. He taps into, and then feeds, our revulsion at Pavlovian-style behavioural conditioning and eugenics. Worse, it is suggested that the price of universal happiness will be the sacrifice of the most hallowed shibboleths of our culture: "motherhood", "home", "family", "freedom", even "love". The exchange yields an insipid happiness that's unworthy of the name. Its evocation arouses our unease and distaste.

In BNW, happiness derives from consuming mass-produced goods, sports such as Obstacle Golf and Centrifugal Bumble-puppy, promiscuous sex, "the feelies", and most famously of all, a supposedly perfect pleasure-drug, soma.

As perfect pleasure-drugs go, soma underwhelms. It's not really a utopian wonderdrug at all. It does make you high. Yet it's more akin to a hangoverless tranquilliser or an opiate - or a psychic anaesthetising SSRI like Prozac - than a truly life-transforming elixir. Third-millennium neuropharmacology, by contrast, will deliver a vastly richer product-range of designer-drugs to order.

For a start, soma is a very one-dimensional euphoriant. It gives rise to only a shallow, unempathetic and intellectually uninteresting well-being. Apparently, taking soma doesn't give Bernard Marx, the disaffected sleep-learning specialist, more than a cheap thrill. Nor does it make him happy with his station in life. John the Savage commits suicide soon after taking soma - guilt and despair born of serotonin depletion? - The drug is said to be better than (promiscuous) sex - the only sex brave new worlders practise. But a regimen of soma doesn't deliver anything sublime or life-enriching. It doesn't catalyse any mystical epiphanies,

intellectual breakthroughs or life-defining insights. It doesn't in any way promote personal growth. Instead, it provides a mindless, inauthentic "imbecile happiness" - a vacuous escapism which makes people comfortable with their lack of freedom. Soma is a narcotic that raises "a quite impenetrable wall between the actual universe and their minds."

If Huxley had wished to tantalise, rather than repel, emotional primitives like us with the biological nirvana soon in prospect, then he could have envisaged utopian wonderdrugs which reinforced or enriched our most cherished ideals. In our imaginations, perhaps we might have been allowed - via chemically-enriched brave new worlders - to turn ourselves into idealised versions of the sort of people we'd most like to be. In this scenario, behavioural conditioning, too, could have been used by the utopians to sustain, rather than undermine, a more sympathetic ethos of civilised society and a life well led. Likewise, biotechnology could have been exploited in BNW to encode life-long fulfilment and super-intellecets for everyone - instead of manufacturing a rigid hierarchy of genetically-preordained castes.

Huxley, however, has an altogether different agenda in mind. He is seeking to warn us against scientific utopianism. He succeeds all too well. Although we tend to see other people, not least the notional brave new worlders, as the hapless victims of propaganda and disinformation, we may find it is we ourselves who have been the manipulated dupes.

For Huxley does an effective hatchet-job on the very sort of "unnatural" hedonic engineering that most of us so urgently need. One practical consequence has been to heighten our already exaggerated fears of state-sanctioned mood-drugs. Hence millions of screwed-up minds, improvable even today by clinically-tested mood-boosters and anti-anxiety agents, just suffer in silence instead. In part this is because people worry they might become zombified addicts; and in part because they are unwilling to cast themselves as humble supplicants of the medical profession by taking state-rationed "antidepressants". Either way, the human cost in fruitless ill-being is immense.

Fortunately, the Net is opening up a vast trans-national freemarket in psychotropics. It will eventually sweep away the restrictive practices of old medical drug cartels and their allies in the pharmaceutical industry. The liberatory potential of the Net as a global drug-delivery and information network has only just begun.

Of course, Huxley can't personally be blamed for prolonging the pain of the old Darwinian order of natural selection. Citing the ill-effects of Brave New World is not the same as impugning its author's motives. Aldous Huxley was a deeply humane person as well as a brilliant polymath. He himself suffered terribly after the death of his adored mother. But death and suffering will be cured only by the application of bioscience. They won't be abolished by spirituality, prophetic sci-fi, or literary intellectualism.

So what form will this cure take?

In the future, it will be feasible technically - at the very least - for pharmacotherapy and genetic medicine to re-engineer us so that we can become - to take one example among billions - a cross between Jesus and Einstein. Potentially, transhumans will be endowed with a greater capacity for love, empathy and emotional depth than anything neurochemically accessible today. Our selfish-gene-driven ancestors - in common with the cartoonish brave new worlders - will strike posterity as functional psychopaths by comparison; and posterity will be right.

In contrast to Brave New World, however, the death of ageing won't be followed by our swift demise after a sixty-odd year life-span. We'll have to reconcile ourselves to the prospect of living happily ever after. Scare-mongering prophets of doom notwithstanding, a life of unremitting bliss isn't nearly as bad as it sounds.

The good news gets better. Drugs - not least the magical trinity of empathogens, entactogens and entheogens - and eventually genetic engineering will open up revolutionary

new state spaces of thought and emotion. Such modes of consciousness are simply unimaginable to the drug-innocent psyche. Today, their metabolic pathways lie across forbidden gaps in the evolutionary fitness landscape. They have previously been hidden by the pressure of natural selection: for Nature has no power of anticipation. Open such spaces up, however, and new modes of selfhood and introspection become accessible. The Dark Age of primordial Darwinian life is about to pass into history.

In later life, Huxley himself modified his antipathy to drug-assisted paradise. Island, Huxley's conception of a real utopia, was modelled on his experiences of mescaline and LSD. But until we get the biological underpinnings of our emotional well-being securely encoded genetically, then psychedelia is mostly off-limits for the purposes of paradise-engineering. Certainly, its intellectual significance cannot be exaggerated, but unfortunately, neither can its ineffable weirdness and the unpredictability of its agents. Thus mescaline, and certainly LSD and its congeners, are not fail-safe euphoriant. The possibility of nightmarish bad trips and total emotional Armageddon is latent in the way our brains are constructed under a regime of selfish-DNA. Uncontrolled eruptions within the psyche must be replaced by the precision-engineering of emotional tone, if nothing else. If rational design is good enough for robots, then it's good enough for us.

In Brave New World, of course, there are no freak-outs on soma. One suspects that this is partly because BNW's emotionally stunted inhabitants don't have the imagination to have a bad trip. But mainly it's because the effects of soma are no more intellectually illuminating than getting a bit drunk. In BNW, our already limited repertoire of hunter-gatherer emotions has been constricted still further. Creative and destructive impulses alike have been purged. The capacity for spirituality has been extinguished. The utopians' "set-point" on the pleasure-pain axis has indeed been shifted. But it's flattened at both ends.

To cap it all, in Brave New World life-long emotional well-being is not genetically pre-programmed as part of everyday mental health. It isn't even assured from birth by euphoriant drugs. For example, juvenile brave new worlders are traumatised with electric shocks as part of the behaviorist-inspired conditioning process in childhood. Toddlers from the lower orders are terrorised with loud noises. This sort of aversion-therapy serves to condition them against liking books. We are told the inhabitants of Brave New World are happy. Yet they periodically experience unpleasant thoughts, feelings and emotions. They just banish them with soma: "One cubic centimetre cures ten gloomy sentiments".

Even then, none of the utopians of any caste come across as very happy. This seems credible: more-or-less chronic happiness sounds so uninteresting that it's easy to believe it must feel a bit uninteresting too. For sure, the utopians are mostly docile and contented. Yet their emotions have been deliberately blunted and repressed. Life is nice - but somehow a bit flat. In the words of the Resident Controller of Western Europe: "No pains have been spared to make your lives emotionally easy - to preserve you, as far as that is possible, from having emotions at all."

A more ambitious target would be to make the world's last unpleasant experience a precisely dateable event; and from this minimum baseline start aiming higher. "Every day, and in every way, I am getting better and better". Coué's mantra of therapeutic self-deception needn't depend on the cultivation of beautiful thoughts. If harnessed to the synthesis of smarter mood-enrichers and genetically-enhanced brains, it might even come true.

Of course, it's easy today to write (mood-congruent) tomes on how everything could go wrong. This review essay is an exploration of what it might be like if they go right. So it's worth contrasting the attributes of Brave New World with the sorts of biological paradise that may be enjoyed by our ecstatic descendants.

Stasis

Brave New World is a benevolent dictatorship: a static, efficient, totalitarian welfare state. There is no war, poverty or crime. Society is stratified by genetically-predestined caste. Intellectually superior Alphas are the top-dogs. Servile, purposely brain-damaged Gammas, Deltas and Epsilons toil away at the bottom. The lower orders are necessary in BNW because Alphas - even soma-fuelled Alphas - could allegedly never be happy doing menial jobs. It is not explained why doing menial work is inconsistent - if you're an Alpha - with a life pharmacological hedonism - nor, for that matter, with genetically-precoded wetware of invincible bliss. In any case, our descendants are likely to automate menial drudgery out of existence; that's what robots are for.

Notionally, BNW is set in the year 632 AF (After Ford). Its biotechnology is highly advanced. Yet the society itself has no historical dynamic: "History is bunk". It is curious to find a utopia where knowledge of the past is banned by the Controllers to prevent invidious comparisons. One might imagine history lessons would be encouraged instead. They would uncover a blood-stained horror story.

Perhaps the Controllers fear historical awareness would stir dissatisfaction with the "utopian" present. Yet this is itself revealing. For Brave New World is not an exciting place to live in. It is a sterile, productivist utopia geared to the consumption of mass-produced goods: "Ending is better than mending". Society is shaped by a single all-embracing political ideology. The motto of the world state is "Community, Identity, Stability."

In Brave New World, there is no depth of feeling, no ferment of ideas, and no artistic creativity. Individuality is suppressed. Intellectual excitement and discovery have been abolished. Its inhabitants are laboratory-grown clones, bottled and standardised from the hatchery. They are conditioned and indoctrinated, and even brainwashed in their sleep. The utopians are never educated to prize thinking for themselves. In Brave New World, the twin goals of happiness and stability - both social and personal - are not just prized but effectively equated.

This surprisingly common notion is ill-conceived. The impregnable well-being of our transhuman descendants is more likely to promote greater diversity, both personal and societal, not stagnation. This is because greater happiness, and in particular enhanced dopamine function, doesn't merely extend the depth of one's motivation to act: the hyper-dopaminergic sense of things to be done. It also broadens the range of stimuli an organism finds rewarding. By expanding the range of potential activities we enjoy, enhanced dopamine function will ensure we will be less likely to get stuck in a depressive rut. This rut leads to the kind of learned helplessness that says nothing will do any good, Nature will take its revenge, and utopias will always go wrong.

In Brave New World, things do occasionally go wrong. But more to the point, we are led to feel the whole social enterprise that BNW represents is horribly misconceived from the outset. In BNW, nothing much really changes. It is an alien world, but scarcely a rich or inexhaustibly diverse one. Tellingly, the monotony of its pleasures mirrors the poverty of our own imaginations in conceiving of radically different ways to be happy. Today, we've barely even begun to conceptualise the range of things it's possible to be happy about. For our brains aren't blessed with the neurochemical substrates to do so. Time spent counting one's blessings is rarely good for one's genes.

BNW is often taken as a pessimistic warning of the dangers of runaway science and technology. Scientific progress, however, was apparently frozen with the advent of a world state. Thus ironically it's not perverse to interpret BNW as a warning of what happens when scientific inquiry is suppressed. One of the reasons why many relatively robust optimists - including some dopamine-driven transhumanists - dislike Brave New World, and accordingly distrust the prospect of universal happiness it symbolises, is that their primary source of everyday aversive experience is boredom. BNW comes across as a stagnant civilisation. It's got immovably stuck in a severely sub-optimal state. Its inhabitants are too contented living in their rut to extricate themselves and progress to higher things. Superficially, yes, Brave New World is a technocratic society. Yet the free flow of ideas and criticism central to science is

absent. Moreover the humanities have withered too. Subversive works of literature are banned. Subtly but inexorably, BNW enforces conformity in innumerable different ways. Its conformism feeds the popular misconception that a life-time of happiness will somehow be boring - even when the biochemical substrates of boredom have vanished.

Controller Mustapha Mond himself obliquely acknowledges the dystopian sterility of BNW when he reflects on Bernard's tearful plea not to be exiled to Iceland: "One would think he was going to have his throat cut. Whereas, if he had the smallest sense, he'd understand that his punishment is really a reward. He's being sent to an island. That's to say, he's being sent to a place where he'll meet the most interesting set of men and women to be found anywhere in the world. All the people who, for one reason or another, have got too self-consciously individual to fit into community life. All the people who aren't satisfied with orthodoxy, who've got independent ideas of their own. Everyone, in a word, who's anyone."

Admittedly, Huxley's BNW enforces a much more benign conformism than Orwell's terrifying 1984. There's no Room 101, no torture, and no war. Early child-rearing practices aside, it's not a study of physically violent totalitarianism. Its riot-police use soma-vaporisers, not teargas and truncheons. Yet its society is as dominated by caste as any historical Eastern despotism. BNW recapitulates all Heaven's hierarchies (recall all those angels, archangels, seraphim, etc.) and few of its promised pleasures. Its satirical grotesqueries and fundamental joylessness are far more memorably captured than its delights - with one pregnant exception, soma.

Unlike the residents of Heaven, BNW's inhabitants don't worship God. Instead, they are brainwashed into revering a scarcely less abstract and remote community. Formally, the community is presided over by the spirit of the apostle of mass-production, Henry Ford. He is worshipped as a god: Alphas and Betas attend soma-consecrated "solidarity services" which culminate in an orgy. But history has been abolished, salvation has already occurred, and the utopians aren't going anywhere.

By contrast, one factor of life spent with even mildly euphoric hypomanic people is pretty constant. The tempo of life, the flow of ideas, and the drama of events speeds up. In a Post-Darwinian Era of universal life-long bliss, the possibility of stasis is remote; in fact one can't rule out an ethos of permanent revolution. But however great the intellectual ferment of ecstatic existence, the nastiness of Darwinian life will have passed into well-deserved oblivion.

I m b e c i l i t y

Some drugs dull, stupefy and sedate. Others sharpen, animate and intensify.

After taking soma, one can apparently drift pleasantly off to sleep. Bernard Marx, for instance, takes four tablets of soma to pass away a long plane journey to the Reservation in New Mexico. When they arrive at the Reservation, Bernard's companion, Lenina, swallows half a gramme of soma when she begins to tire of the Warden's lecture, "with the result that she could now sit, serenely not listening, thinking of nothing at all". Such a response suggests the user's sensibilities are numbed rather than heightened. In BNW, people resort to soma when they feel depressed, angry or have intrusive negative thoughts. They take it because their lives, like society itself, are empty of spirituality or higher meaning. Soma keeps the population comfortable with their lot.

Soma also shows physiological tolerance. Linda, the Savage's mother, takes too much: up to twenty grammes a day. Taken in excess, soma acts as a respiratory depressant. Linda eventually dies of an overdose. This again suggests that Huxley models soma more on opiates than the sort of clinically valuable mood-brightener which subverts the hedonic treadmill of negative feedback mechanisms in the CNS. The parallel to be drawn with opiates is

admittedly far from exact. Unlike soma, good old-fashioned heroin is bad news for your sex life. But like soma, it won't sharpen your wits.

Even today, the idea that chemically-driven happiness must dull and pacify is demonstrably false. Mood-boosting psychostimulants are likely to heighten awareness. They increase self-assertiveness. On some indices, and in low doses, stimulants can improve intellectual performance. Combat-troops on both sides in World War Two, for instance, were regularly given amphetamines. This didn't make them nicer or gentler or dumber. Dopaminergic power-drugs tend to increase willpower, wakefulness and action. "Serenics", by contrast, have been researched by the military and the pharmaceutical industry. They may indeed exert a quiescent effect - ideally on the enemy. But variants could also be used on, or by, one's own troops to induce fearlessness.

A second and less warlike corrective to the dumb-and-docile stereotype is provided by so-called manic-depressives. One reason that many victims of bipolar disorder, notably those who experience the euphoric subtype of (hypo-)mania, skip out on their lithium is that when "euthymic" they can still partially recall just how wonderfully intense and euphoric life can be in its manic phase. Life on lithium is flatter. For it's the havoc wrought on the lives of others which makes the uncontrolled exuberance of frank euphoric mania so disastrous. Depressed or nominally euthymic people are easier for the authorities to control than exuberant life-lovers.

Thus one of the tasks facing a mature fusion of biological psychiatry and psychogenetic medicine will be to deliver enriched well-being and lucid intelligence to anyone who wants it without running the risk of triggering ungovernable mania. MDMA(Ecstasy) briefly offers a glimpse of what full-blooded mental health might be like. Like soma, it induces both happiness and serenity. Unlike soma, it is neurotoxic. But used sparingly, it can also be profound, empathetic and soulfully intense.

Drugs which commonly induce dysphoria, on the other hand, are truly sinister instruments of social control. They are far more likely to induce the "infantile decorum" demanded of BNW utopians than euphoriants. The major tranquillisers, including the archetypal "chemical cosh" chlorpromazine (Largactil), subdue their victims by acting as dopamine antagonists. At high dosages, willpower is blunted, affect is flattened, and mood is typically depressed. The subject becomes sedated. Intellectual acuity is dulled. They are a widely-used tool in some penal systems.

A m o r a l i t y

Soma doesn't merely stupefy. At face value, the happiness it offers is amoral; it's "hedonistic" in the baser sense. Soma-fuelled highs aren't a function of the well-being of others. A synthetic high doesn't force you to be happy for a reason: unlike people, a good drug will never let you down. True, soma-consumption doesn't actively promote anti-social behaviour. Yet the drug is all about instant gratification.

Drug-naive John the Savage, by contrast, has a firm code of conduct. His happiness - and sorrows - don't derive from taking a soul-corrupting chemical. His emotional responses are apparently based on reasons - though these reasons themselves presumably have a neurochemical basis. Justified or unjustified, his happiness, like our own today, will always be vulnerable to disappointment. Huxley clearly feels that if a loved one dies, for instance, then one will not merely grieve: it is appropriate that one grieves, and there is good reason to do so. It would be wrong not to go into mourning. A friend who said he might be sad if you died, but he wouldn't let it spoil his whole day - for instance - might strike us as quite unfeeling, if rather droll: not much of a friend at all.

By our lights, the utopians show equally poor taste. They don't ever grieve or treat each others' existence as special. They are conditioned to treat death as natural and even pleasant. As children, they are given sweets to eat when they go to watch the process of

dying in hospital. Their greatest kick comes from taking a drug. Life on soma, together with early behavioural conditioning, leaves them oblivious to the true welfare of others. The utopians are blind to the tragedy of death, and to its pathos.

Surely this is a powerful indictment of all synthetic pleasures? Shouldn't we echo the Savage's denunciation of soma to the Deltas: "Don't take that horrible stuff. It's poison, it's poison...Poison to the soul as well as the body...Throw it all away, that horrible poison". Don't all chemical euphorians rob us of our humanity?

Not really; or only on the most malaise-sodden conception of what it means to be human. Media stereotypes of today's crude psychopharmacy are not a reliable guide to the next few million years. It is sometimes supposed that all psychoactive drug-taking must inherently be egotistical. This egotism is exemplified in the contemporary world by the effects of powerdrugs such as cocaine and the amphetamines, or by the warm cocoon of emotional self-sufficiency afforded by opium and its more potent analogues and derivatives. Yet drugs - not least the empathogens such as Ecstasy - and genetic engineering can in principle be customised to let us be nicer; to reinforce our idealised codes of conduct. The complex role of the "civilising neurotransmitter" serotonin, and its multiple receptor subtypes, is hugely instructive - if still poorly understood. If we genetically re-regulate its receptors, we can make ourselves kinder as well as happier.

The crucial point is that, potentially, long-acting designerdrugs needn't supplant our moral codes, but chemically predispose us to act them out in the very way we would wish. Biotechnology allows us to conquer what classical antiquity called *akrasia* - literally, "bad mixture" - . This was a Greek term for the character flaw of weakness of the will where an agent is unable to perform an action that s/he knows to be right. Tomorrow's "personality pills" permit us to become the kind of people we'd most like to be - to fulfil our second-order desires. Such self-reinvention is an option that our genetic constitution today frequently precludes. Altruism and self-sacrifice for the benefit of anonymous strangers - including starving Third World orphans whom we acknowledge need resources desperately more than we do - is extraordinarily hard to practise consistently. Sometimes it's impossible, even for the most benevolent-minded of the affluent planetary elite. Self-referential altruism is easier, but it's also different - narrow and small-scale. Unfortunately, the true altruists among our (non-)ancestors got eaten or outbred. Their genes perished with them.

More specifically, in chemical terms, very crudely, dopaminergics fortify one's will-power, mu-opioids enhance one's happiness, while certain serotonergics can deepen one's empathy and social conscience. Safe, long-lasting site-specific hybrids will do both. Richer designer cocktails spiced with added ingredients will be far better still. It is tempting to conceptualise such cocktails in terms of our current knowledge of, say, oxytocin, phenylethylamine, substance P antagonists, selective mu-opioid agonists and enkephalinase inhibitors etc. But this is probably naive. Post-synaptic receptor antagonists block their psychoactive effects, suggesting it's the post-synaptic intra-cellular cascades they trigger which form the heartlands of the soul. Our inner depths haven't yet been properly explored, let alone genetically re-regulated.

But our ignorance and inertia are receding fast. Molecular neuroscience and behavioural genetics are proceeding at dizzying pace. Better Living Through Chemistry doesn't have to be just a snappy slogan. Take it seriously, and we can bootstrap our way into becoming smart and happy while biologically deepening our social conscience too. Hopefully, the need for manifestos and ideological propaganda will pass. They must be replaced by an international biomedical research program of paradise-engineering. The fun hasn't even begun. The moral urgency is immense.

It's true that morality in the contemporary sense may no longer be needed when suffering has been cured. The distinction between value and happiness has distinctively moral significance only in the Darwinian Era where the fissure originated. Here, in the short-run, good feelings and good conduct may conflict. Gratifying one's immediate impulses sometimes leads to heartache in the longer term, both to oneself and others. When suffering

has been eliminated, however, specifically moral codes of conduct become redundant. On any utilitarian analysis, at least, acts of immorality become impossible. The values of our descendants will be predicated on immense emotional well-being, but they won't necessarily be focused on it; happiness may have become part of the innate texture of sentient existence.

In *Brave New World*, by contrast, unpleasantness hasn't been eradicated. That's one reason its citizens' behaviour is so shocking, and one reason they take soma. BNW's outright immorality is all too conceivable by the reader.

Typically, we are indignant when we see the callous way in which John the Savage is treated, or when we witness the revulsion provoked in the Director by the sight of John's ageing mother – the companion he had himself long ago abandoned for dead after an ill-fated trip to the Reservation. Above and beyond this, all sorts of sour undercurrents are endemic to the society as a whole. Bernard is chronically discontented, even "melancholy". The Alpha misfits in Iceland are condemned to a bleak exile. Feely-author Helmholtz Watson is frustrated by a sense that he is capable of greater things than authoring repetitive propaganda. The Director of Hatcheries is utterly humiliated by the understandably aggrieved Bernard. Boastful Bernard is himself reduced to tears of despair when the Savage refuses to be paraded in front of assorted dignitaries and the Arch-Community-Songster of Canterbury. Lesser problems and unpleasantnesses are commonplace. And appallingly, the utopians come to gawp at John in his hermit's exile and watch his suffering for fun.

Brave New World is a patently substandard utopia in need of some true moral imagination – and indignation – to sort it out.

False Happiness

Huxley implies that by abolishing nastiness and mental pain, the brave new worlders have got rid of the most profound and sublime experiences that life can offer as well. Most notably, they have sacrificed a mysterious deeper happiness which is implied, but not stated, to be pharmacologically inaccessible to the utopians. The metaphysical basis of this presumption is obscure.

There are hints, too, that some of the utopians may feel an ill-defined sense of dissatisfaction, an intermittent sense that their lives are meaningless. It is implied, further, that if we are to find true fulfilment and meaning in our own lives, then we must be able to contrast the good parts of life with the bad parts, to feel both joy and despair. As rationalisations go, it's a good one.

But it's still wrong-headed. If pressed, we must concede that the victims of chronic depression or pain today don't need interludes of happiness or anaesthesia to know they are suffering horribly. Moreover, if the mere relativity of pain and pleasure were true, then one might imagine that pseudo-memories in the form of neurochemical artefacts imbued with the texture of "pastness" would do the job of contrast just as well as raw nastiness. The neurochemical signatures of *deja vu* and *jamais vu* provide us with clues on how the re-engineering could be done. But this sort of stratagem isn't on Huxley's agenda. The clear implication of *Brave New World* is that any kind of drug-delivered happiness is "false" or inauthentic. In similar fashion, all forms of human genetic engineering and overt behavioural conditioning are to be tarred with the same brush. Conversely, the natural happiness of the handsome, blond-haired, blue-eyed Savage on the Reservation is portrayed as more real and authentic, albeit transient and sometimes interspersed with sorrow.

The contrast between true and false happiness, however, is itself problematic. Even if the notion is both intelligible and potentially referential, it's not clear that "natural", selfish-DNA-sculpted minds offer a more authentic consciousness than precision-engineered euphoria. Highly selective and site-specific designer drugs – and, ultimately, genetic engineering – won't make things seem weird or alien. On the contrary, they can deliver a greater sense of realism, verisimilitude and emotional depth to raw states of biochemical bliss

than today's parochial conception of Real Life. Future generations will 're-encephalise' emotion to serve us, sentient genetic vehicles, rather than selfish DNA. Our well-being will feel utterly natural, and in common with most things in the natural world, it will be.

If desired, too, designer drugs can be used to trigger paroxysms of spiritual enlightenment · or at least the phenomenology thereof · transcending the ecstasies of the holiest mystic or the hyperreligiosity of a temporal-lobe epileptic. So future psychoactives needn't yield only the ersatz happiness of a brave new worlder, nor will their use be followed by the proverbial Dark Night Of The Soul. Just so long as neurotransmitter activation of the right subreceptors triggers the right post-synaptic intra-cellular cascades regulated by the right alleles of the right genes in the right way indefinitely · and this is a technical problem with a technical solution · then we have paradise everlasting, at worst. If we want it, we can enjoy a liquid intensity of awareness far more compelling than our mundane existence as contemporary sleepwalking Homo sapiens. It will be vastly more enjoyable to boot.

If sustained, such modes of consciousness can furnish a far more potent definition of reality than the psychiatric slumlands of the past. Subtly or otherwise, today's unenriched textures of consciousness express feelings of depersonalisation and derealisation. Such feelings are frequently nameless · though still all too real · because they are without proper contrast: anonymous angst-ridden modes of selfhood that, in time, will best be forgotten. "True" happiness, on the other hand, will feel totally "real". Authenticity should be a design-specification of conscious mind, not the fleeting and incidental by-product of the workings of selfish DNA.

Tomorrow's neuropharmacology, then, offers incalculably greater riches than souped-up soma. True, drugs can also deliver neurochemical wastelands of silliness and shallowness. A lot of the state-spaces currently beyond our mental horizons may be nasty or uninteresting or both. Statistically, most are probably just psychotic. But a lot aren't. Entactogens, say, literally, to "touch within" may eventually be as big an industry as diet pills; and what they offer by way of a capacity for self-love will be far more use in boosting personal self-esteem.

"Entactogens", "empathogens", "entheogens" · these are fancy words. Until one is granted first-person experience of the states they open up, the phraseology invoked to get some kind of intellectual handle on Altered States may seem gobbledygook. What on earth does it all mean? But resort to such coinages isn't a retreat into obscurantism or mystery-mongering. It's a bid to bring some kind of order to unmapped exotica way beyond the drug-naïve imagination.

One can try to hint at the properties of even seriously altered states by syntactically shuffling around the lexical husks of the old order. But the kind of consciousness disclosed by these extraordinary agents provides the basis for new primitive terms in the language of a conceptual apparatus that hasn't yet been invented. Such forms of what-it's-likeness can't properly be defined or evoked within the state-specific resources of the old order. Ordinarily, they're not neurochemically accessible to us at all. Genetically, we're action-oriented hunter-gatherers, not introspective psychonauts.

So how well do we understand the sort of happiness Huxley indicts?

Even though we find the nature of BNW-issue "soma" as elusive as its Vedic ancestor, we think we can imagine, more-or-less, what taking "soma" might be like; and judge accordingly. Within limits, plain "uppers" and "downers" are intelligible to us in their effects, though even here our semantic competence is debatable · right now, it's hard to imagine what terms like "torture" and "ecstasy" really denote. When talking about drugs with (in one sense) more far-reaching effects, however, it's easy to lapse into gibbering nonsense. If one has never taken a particular drug, then one's conception of its distinctive nature derives from analogy with familiar agents, or from its behavioural effects on other people, not on the particular effects its use typically exerts on the texture of consciousness. One may be

confident that other people are using the term in the same way only in virtue of their physiological similarity to oneself, not through any set of operationally defined criteria. Thus until one has tried a drug, it's hard to understand what one is praising or condemning.

This doesn't normally restrain us. But are we rationally entitled to pass a judgement on any drug-based civilisation based on one fictional model?

No, surely not. Underground chemists and pharmaceutical companies alike are likely to synthesise all sorts of 'soma' in future. Licitly or otherwise, we're going to explore what it's like, and we'll like it a lot. But to suppose that the happiness of our transhuman descendants will thereby be 'false' or shallow is naive. Post-humans are not going to get drunk and stoned. Their well-being will infuse ideas, modes of introspection, varieties of selfhood, structures of mentales, and whole new sense modalities that haven't even been dreamt of today.

Brave New World-based soma-scenarios, by contrast, are highly conceivable. This is one reason why they are so unrealistic.

T o t a l i t a r i a n

BNW is a benevolent dictatorship - or at least a benevolent oligarchy, for at its pinnacle there are ten world controllers. We get to meet its spokesman, the donnish Mustapha Mond, Resident Controller of Western Europe. Mond governs a society where all aspects of an individual's life, from conception and conveyor-belt reproduction onwards, are determined by the state. The individuality of BNW's two billion hatchlings is systematically stifled. A government bureau, the Predestinators, decides a prospective citizen's role in the hierarchy. Children are raised and conditioned by the state bureaucracy, not brought up by natural families. There are only ten thousand surnames. Value has been stripped away from the person as an individual human being; respect belongs only to society as a whole. Citizens must not fall in love, marry, or have their own kids. This would seduce their allegiance away from the community as a whole by providing a rival focus of affection. The individual's loyalty is owed to the state alone. By getting rid of potential sources of tension and anxiety - and dispelling residual discontents with soma - the World State controls its populace no less than Big Brother.

Brave New World, then, is centred around control and manipulation. As ever, the fate of an individual depends on the interplay of Nature and Nurture, heredity and environment: but the utopian state apparatus controls both. Naturally, we find this control disquieting. One of our deepest fears about the prospect of tampering with our natural (i.e. selfish DNA-driven) biological endowment is that we will ourselves be controlled and manipulated by others. Huxley plays on these anxieties to devastating effect. He sows the fear that a future world state may rob us of the right to be unhappy.

It must be noted that this right is not immediately in jeopardy. Huxley, however, evidently feels that the threat of compulsory well-being is real. This is reflected in his choice of a quotation from Nicolas Berdiaeff as BNW's epigraph. "Utopias appear to be much easier to realize than one formerly believed. We currently face a question that would otherwise fill us with anguish: How to avoid their becoming definitively real?" Perhaps not all of the multiple ironies here are intended by BNW's author.

Huxley deftly coaxes us into siding with John the Savage as he defends the right to suffer illness, pain, and fear against the arguments of the indulgent Controller. The Savage claims the right to be unhappy. We sympathise. Intuitively but obscurely, he shouldn't have to suffer enforced bliss. We may claim, like the Savage, 'the right to grow old and ugly and impotent; the right to have syphilis and cancer; the right to have too little to eat; the right to be lousy; the right to live in constant apprehension of what may happen tomorrow; the right to catch typhoid; the right to be tortured by unspeakable pains of every kind'. Yet the argument against chemical enslavement cuts both ways. The point today - and at any other

time, surely · is that we should have the right not to be unhappy. And above all, when suffering becomes truly optional, we shouldn't force our toxic legacy wetware on others.

But what will be the price of all this happiness?

It's not what we might intuitively expect. Perhaps surprisingly, freedom and individuality can potentially be enhanced by chemically boosting personal well-being. Vulnerable and unhappy people are probably more susceptible to brainwashing · and the subtler sorts of mind-control · than active citizens who are happy and psychologically robust. Happiness is empowering. In real life, it is notable that mood- and resilience-enhancing drugs, such as the selective serotonin reuptake inhibitors, tend to reduce submissiveness and subordinate behaviour. Rats and monkeys on SSRIs climb the pecking order, or transcend it altogether. They don't seem to try and dominate their fellows · loosely speaking, they just stop letting themselves be messed around. If pharmacologically and genetically enriched, we may all aspire to act likewise.

Admittedly, this argument isn't decisive. It's a huge topic. Humans, a philosopher once observed, are not rats. Properly-controlled studies of altered serotonin function in humans are lacking. The intra-cellular consequences of fifteen-plus serotonin receptor subtypes defy facile explanation. But we do know that a dysfunctional serotonin system is correlated with low social status. Enhancing serotonin function · other things being equal · is likely to leave an individual less likely to submit to authority, not docile and emasculated. *Brave New World* is exquisite satire, but the utopia it imagines is sociologically and biologically implausible. Its happy conformists are shallow cartoons.

Of course, any analysis of the state's role in future millennia is hugely speculative. Both minimalist "night-watchman" states and extreme totalitarian scenarios are conceivable. In some respects, any future world government may indeed be far more intrusive than the typical nation-state today. If the ageing process and the inevitability of death is superseded, for instance, then decisions about reproduction · on earth at least · simply cannot be left to the discretion of individual couples alone. This is because we'd soon be left with standing room only. The imminence of widespread human cloning, too, makes increased regulation and accountability inevitable · quite disturbingly so. But challenges like population control shouldn't overshadow the fact that members of a happy, confident, psychologically robust citizenry are far less likely to be the malleable pawns of a ruling elite than contented fatalists. A chemically-enslaved underclass of happy helots remains unlikely.

A n t h r o p o c e n t r i c

Brave New World is a utopia conceived on the basis of species-self interest masquerading as a universal paradise. Most of the inhabitants of our planet don't get a look in, any more than they do today.

Strong words? Not really. Statistically, most of the suffering in the contemporary world isn't undergone by human beings. It is sometimes supposed that intensity and degree of consciousness · between if not within species · is inseparably bound up with intelligence. Accordingly, humans are prone to credit themselves with a "higher" consciousness than members of other taxa, as well as · sometimes more justifiably · sharper intellects. Non-human animals aren't treated as morally and functionally akin to human infants and toddlers i.e. in need of looking after. Instead, they are wantonly abused, exploited, and killed.

Yet it is a striking fact that our most primitive experiences · both phylogenetically and ontogenetically · are also the most vivid. For physical suffering probably has more to do with the number and synaptic density of pain cells than a hypertrophied neocortex. The extremes of pain and thirst, for example, are excruciatingly intense. By contrast, the kinds of experience most associated with the acme of human intellectual endeavour, namely thought-episodes in the pre-frontal region, are phenomenologically so anaemic that it is hard to introspect their properties at all.

Hardcore paradise-engineering · and not the brittle parody of paradise served up in BNW · will eradicate such nastiness from the living world altogether. None of Huxley's implicit criticism of the utopians can conceivably apply to the rest of the animal kingdom. For by no stretch of the imagination could the most ardent misery-monger claim animal suffering is essential for the production of great art and literature · a common rationale for its preservation and alleged redeeming value in humans. Nor would its loss lead to great spiritual emptiness. Animal suffering is just savage, empty and pointless. So we'll probably scrap it when it becomes easy enough to do so.

Whether pain takes the form of the eternal Treblinka of our Fordist factory farms and conveyor-belt killing factories, or whether it's manifested as the cruelties of a living world still governed by natural selection, the sheer viciousness of the Darwinian Era is likely to horrify our morally saner near-descendants. A few centuries hence · the chronological details are sketchy · hordes of self-replicating nanorobots armed with retroviral vectors and the power of on-board quantum supercomputers will hunt out the biomolecular signature of aversive experience all the way down the phylogenetic tree, and genetically eliminate it. Meanwhile, depot-contraception, not merciless predation, will control population in our wildlife parks. Carnivorous killing-machines · and that includes dear misunderstood kitty, a beautiful sociopath · will be reprogrammed or phased out. Down on the farm, tasty, genetically-engineered ambrosia will replace abused sentience. For paradise-engineering entails global veganism. Utopia cannot be built on top of an ecosystem of pain and fear. Unfortunately, this is an issue on which Brave New World is silent.

How is it possible to make such predictions with any confidence?

Properly speaking, one can't, or at least not without a heap of caveats. But as science progressively gives us the power to remould matter and energy to suit our desires · or whims · it would take an extraordinary degree of malice for us to sustain the painfulness of Darwinian life indefinitely. For as our power increases, so does our complicity in its persistence.

Even unregenerate humans don't tend to be sustainably ill-natured. So when genetically-engineered vat-food tastes as good as dead meat, we may muster enough moral courage to bring the animal holocaust to an end.

C a s t e · b o u n d

In BNW, genetic engineering isn't used straightforwardly to pre-code happiness. Instead, it underwrites the subordination and inferiority of the lower orders. In essence, Brave New World is a global caste society. Social stratification is institutionalised in a five-way genetic split. There is no social mobility. Alphas invariably rule, Epsilons invariably toil. Genetic differences are reinforced by systematic conditioning.

Historically, dominance and winning have been associated with good, even manically euphoric, mood; losing and submission are associated with subdued spirits and depression. Rank theory suggests that the far greater incidence of the internalised correlate of the yielding sub-routine, depression, reflects how low spirits were frequently more adaptive among group-living organisms than manic self-assertion. But in Brave New World, the correlation vanishes or is even inverted. The lower orders are at least as happy as the Alphas thanks to soma, childhood conditioning and their brain-damaged incapacity for original thought. Thus in sleep-lessons on class consciousness, for instance, juvenile Betas learn to love being Betas. They learn to respect Alphas who "work much harder than we do, because they're so frightfully clever." But they also learn to take pleasure in not being Gammas, Deltas, or the even more witless Epsilons. "Oh no," the hypnopedia tapes suggest, "I don't want to play with Delta children."

One might imagine that progress in automation technology would eliminate the menial, repetitive tasks so unsuitable for big-brained Alphas. But apparently this would leave the lower castes disaffected and without a role: allegedly a good reason for freezing scientific progress where it is. It might be imagined, too, that one solution here would be to stop producing oxygen-starved morons altogether. Why not stick to churning out Alphas? The Controller Mustapha Mond informs us that an all-Alpha society was once tried on an island. The result of the experiment was civil war. 19 000 of the 22 000 Alphas perished. Thus the lower castes are needed indefinitely. The happiness that they derive from their routine-bound lives guarantees stability for society as a whole. "The optimum population", the Controller observes, "is modelled on the iceberg - eight-ninths below the waterline, one-ninth above".

There are evidently (strong!) counter-arguments and rebuttals that could be delivered against any specific variant of this scenario. But Huxley isn't interested in details. BNW is a deeply pessimistic blanket-warning against all forms of genetic engineering and eugenics. Shouldn't we keep the status quo and ban them altogether? Let's play safe. In the last analysis, Nature Knows Best.

As it stands, this argument is horribly facile. The ways in which the life sciences can be abused are certainly manifold. Bioethics deserves to become a mainstream academic discipline. But the idea that a living world organised on principles of blind genetic selfishness - the bedrock of the Darwinian Era - is inherently better than anything based on rational design is surely specious. Selfishness, whether in the technical or overlapping popular sense, is a spectacularly awful principle on which to base any civilisation. Sooner or later, simple means-ends-analysis, if nothing else, will dictate the use of genetic engineering to manufacture constitutionally happy mind/brains. Reams of philosophical sophistry and complication aside, that's what we're all after, obliquely and under another description or otherwise; and biotechnology is the only effective way to get it.

For despite how frequently irrational we may be in satisfying our desires, we're all slaves to the pleasure principle. No one ever leaves a well-functioning pleasure-machine because they get bored: unlike the derivative joys of food, drink and sex, the delightfulness of intra-cranial self-stimulation of the pleasure-centres shows no tolerance. Natural selection has "encephalised" emotion to disguise our dependence on the opioidergic and mesolimbic dopamine circuitry of reward. Since raw, unfocused emotion is blind and impotent, its axonal and dendritic processes have been recruited into innervating the neocortex. All our layers of cortical complexity conspire to help self-replicating DNA leave more copies of itself. Thus we fetishise all sorts of irrelevant cerebral bric-a-brac "intentional objects": loosely, what we're happy or upset "about" that has come to be associated with adaptively nice and nasty experiences in our past. But the attributes of power, status and money, for instance, however obviously nice they seem today, aren't inherently pleasurable. They yield only a derivative kick that can be chemically edited out of existence. Their cortical representations have to be innervated by limbically-generated emotions in the right way - or the wrong way - for them to seem nice at all.

Rationally, then, if we want to modulate our happiness so that it's safe and socially sustainable, we must genetically code pre-programmed well-being in a way that shuts down the old dominance-and-submission circuits too. Such a shut-down is crudely feasible today on serotonergics, both recreational and clinical. But the shut-down can be comprehensive and permanent. Germ-line gene therapy is better than a lifetime on drugs.

Is this sort of major genetic re-write likely?

Yes, probably. A revolution in reproductive technologies is imminent. But in the meantime, any unreconstructed power-trippers can get a far bigger kick in immersive VR than they can playing primate party-politics. If one wants to be Master Of The Universe, then so be it: a chacun son gout. The narrative software which supports such virtual worlds can even be pharmacologically enhanced in the user so that virtual world mastery is always better than The Real Thing - relegated one day, perhaps, to a fading antiquarian relic. The

fusion of drugs and computer-generated worlds will yield greater verisimilitude than anything possible in recalcitrant old organic VR · the dynamic simulations which perceptual naive realists call the world. For we live in a messy and frustrating regime which passes itself off as The Real World, but is actually a species-specific construct coded by DNA.

OK. But can power-games really be confined exclusively to VR? Won't tomorrow's Alphas want to dominate both?

This question needs a book, not the obiter dicta of a literary essay. But if one can enjoy champagne, why drink meths, or even be tempted to try it in the first place? In common with non-human animals, we respond most powerfully to hot-button supernormal stimuli. Getting turned on by the heightened verisimilitude of drugs-plus-VR from a very young age is likely to eclipse anything else on offer.

This isn't to deny that in any transitional era to a mature post-Darwinian paradise, there will have to be huge safeguards · no less elaborate than the multiple failsafe procedures surrounding the launch codes for today's nuclear weaponry. In the near future, for instance, prospective candidates for political leadership in The Real World will probably have their DNA profiles scrutinised no less exhaustively than their sexual peccadillos. For it will be imprudent to elect unenriched primitives endowed with potentially dangerous genotypes. If one is going to put oneself and one's children into, say, ecstasy-like states of loving empathy and trust, then one is potentially more vulnerable to genetic cavemen. But this is all the more reason to design beautifully enhanced analogues of ecstasy and coke which fuse the best features of both.

Even if a power-tripper's fantasy wish-fulfilment is confined to private universes, we are still likely to view it as an unnerving prospect. One of the reasons we find the very thought of being dominated and controlled and manipulated à la BNW so aversive is that we associate such images with frustration, nastiness and depression. For sure, the Brave New Worlders are typically happy rather than depressed. Yet they are all, bar perhaps the Controllers, manipulated dupes. The worry that we ourselves might ever suffer a similar fate is unsettling and depressing. Brave New World gives happiness a bad name.

But it's misery that deserves to be stigmatised and stamped out. Brave New World dignifies unpleasantness in the guise of noble savagery just when it's poised to become biologically optional. And on occasion unpleasantness really can be horrific · too bad to describe in words. Some forms of extreme pain, for instance, are so terrible to experience that one would sacrifice the whole world to get rid of the agony. Pain just this bad is happening in the living world right now. It's misguided to ask whether such pain is really as bad as it seems to be · because the reality is the very appearance one is trying vainly to describe. The extremes of so-called "mental" pain can be no less dreadful. They may embody suicidal despair far beyond everyday ill-spirits. They are happening right now in the living world as well. Their existence reflects the way our mind/brains are built. Unless the vertebrate central nervous system is genetically recoded, there will be traumas and malaise in utopia · any utopia · too.

No behavioural account of even moderately severe depression, for instance, can do justice to its subjective awfulness. But a spectrum of depressive signs and symptoms will persist within even a latter-day Garden of Eden · in the absence of good drugs and better genes. We can understand why depressive states evolved among social animals in terms of the selective advantage of depressive behaviour in reinforcing adaptive patterns of dominance and subordination, avoiding damaging physical fights with superior rivals, or of inducing hypercholinergic frenzy of reflective thought when life goes badly wrong · for one's genes. Likewise, intense and unpleasant social anxiety was sometimes adaptive too. So was an involuntary capacity for the torments of sexual jealousy, fear, terror, hunger, thirst and disgust. Our notions of dominance and subordination are embedded within this stew of emotions. They are clearly quite fundamental to our social relationships. They pervade our whole conceptual scheme. When we try to imagine the distant future, we may of course imagine hi-tech gee-whizzery. Yet emotionally, we also think in primitive terms of

dominance and submission, of hierarchy and power structures, superiority and inferiority. Even when we imagine future computers and robots, we are liable to have simple-minded fantasies about being used, dominated, and overthrown. Bug-eyed extraterrestrials from the Planet Zog, too, and their legion of hydra-headed sci-fi cousins, are implicitly assumed to have the motivational structure of our vertebrate ancestors. Superficially they may be alien – all those tentacles – but really they're just like us. Surely they'll want to dominate us, control us, invade earth etc? Huxley's vision of control and manipulation is (somewhat) subtler; but it belongs to the same atavistic tradition.

For the foreseeable future, these concerns aren't idle. We may rightly worry that if some of us – perhaps most of us – are destined to get drugged-up, genetically-rewritten and plugged into designer worlds, then might not invisible puppet-masters be controlling us for their own ends, whatever their motives? Who'll be in charge of the basement infrastructure which sustains all the multiple layers of VR – and thus ultimately running the show? *Quis custodiet ipsos custodes?* as we say here in Brighton.

Admittedly, sophisticated and intellectually enriched post-humans are unlikely to be naive realists about "perception"; so they'll recognise that what their ancestors called "real life" was no more privileged than what we might call, say, "the medieval world" – the virtual worlds instantiated by medievales. But any unenriched primitives still living in organic VR could still be potentially dangerous, because they could bring everything else tumbling down. In certain limited respects, their virtual worlds, like our own, would causally co-vary with the mind-independent world in ways that blissed-up total-VR dwellers would typically lack. So can it ever be safe to be totally nice and totally happy?

These topics deserve a book – many books – too. The fixations they express are doubtless still of extreme interest to contemporary humans. Sado-masochistic images of domination-and-submission loom large in a lot of our fantasies too. The categories of experience they reflect were of potent significance on the African savannah, where they bore on the ability to get the "best" mates and leave most copies of one's genes. But they won't persist for ever. A tendency to such dominance-and-control syndromes is going to be written out of the genome – as soon we gain mastery of rewriting the script. For on the whole, we want our kids to be nice.

More generally, the whole "evolutionary environment of adaptation" is poised for a revolution. This is important. When any particular suite of alleles ceases to be the result of random mutation and blind natural selection, and is instead pre-selected by intelligent agents in conscious anticipation of their likely effects, then the criteria of genetic fitness will change too. The sociobiological and popular senses of "selfish" will progressively diverge rather than typically overlap. Allegedly "immutable" human nature will change as well when the genetic-rewrite gathers momentum. The classical Darwinian Era is drawing to a close.

Unfortunately, its death agonies may be prolonged. Knee-jerk pessimism and outright cynicism abound among humanistic pundits in the press. They are common in literary academia. And of course any competent doom-monger can glibly extrapolate the trends of the past into the future. Yet anti-utopianism ignores even the foreseeable discontinuities that lie ahead of us as we mature into post-humans. Most notably, it ignores the major evolutionary transition now imminent in the future of life. This is the era when we rewrite the genome in our own interest to make ourselves happy. In the meantime, we just act out variations on dramas scripted by selfish DNA.

Philistine

Brave New World is a stupid society. For the most part, even the Alphas don't do anything more exalted than play Obstacle Golf. A handful of the Alphas are well-delineated: Bernard, Helmholtz, and Mustapha Mond. They are truly clever. Huxley is far too brilliant to write a novel with convincingly dim-witted lead characters. The Savage, in particular, is an implausibly articulate vehicle for Huxley's own sympathies. But in the main, brave new

worlders are empty-headed mental invalids in the grip of terminal mind-rot · happy pigs rather than types of unhappy Socrates.

Since the utopians are (largely) contented with their lives, they don't produce Great Art. Happiness and Great Art are allegedly incompatible. Great Art and Great Literature are very dear to Huxley's heart. But is artistic genius really stifled without inner torment? Is paradise strictly for low-brows?

There is a great deal of ideological baggage that needs to be picked apart here; or preferably slashed like a Gordian knot. The existence of great art, unlike (controversially) great science, is not state-neutral fact about the world. Not least, "great art" depends on the resonances it strikes in its audience. Today we're stuck with legacy wetware and genetically-driven malaise. It's frequently nasty and sometimes terrible. So we can currently appreciate only too well "great" books and plays about murder, violence, treachery, child abuse, suicidal despair etc. Such themes, especially when "well"-handled in classy prose, strike us as more "authentic" than happy pap. Thus a (decaying) Oxbridge literary intelligentsia can celebrate, say, the wonderful cathartic experience offered by Greek tragedies · with their everyday tales of bestiality, cannibalism, rape and murder among the Greek gods. It's good to have one's baser appetites dressed up so intelligently.

Yet after the ecstatic phase-change ahead in our affective states · the most important evolutionary transition in the future of life itself · the classical literary canon may fall into obscurity. Enriched minds with different emotions encephalised in different ways are unlikely to be edified by the cultural artefacts of a bygone era. Conversely, we might ourselves take a jaundiced view if we could inspect the artistic products of a civilisation of native-born ecstasies. This is because any future art which explores lives predicated on gradations of delight will seem pretty vapid from here. We find it hard enough to imagine even one flavour of sublimity, let alone a multitude.

The nagging question may persist: will posterity's Art and Literature · or art-forms expressing modes of experience we haven't even accessed yet · really be Great? To its creators, sure, their handiwork may seem brilliant and beautiful, moving and profound. But might not its blissed-out authors be simply conning themselves? Could they have lost true critical insight, even if they retain its shadowy functional analogues?

Such questions demand a treatise on the nature and objectivity of value judgements. Yet perhaps asking whether we would appreciate ecstatic art of 500 or 5000 years hence is futile in the first place. We simply can't know what we're talking about. For we are unhappy pigs, and our own arts are mood-congruent perversions. The real philistinism to worry about lies in the emotional illiteracy of the present. Our genetically-enriched posterity will have no need of our condescension.

T H I N G S G O W R O N G

Even by its own criteria, BNW is not a society where everyone is happy. There are asylums in Iceland and the Falklands for Alphamale misfits. Bernard Marx is disaffected and emotionally insecure; a mistake in the bottling plant left him stunted. Lenina has lupus. If you run out of soma, a fate which befalls Lenina when visiting the Reservation, you feel sick; well-being is not truly genetically pre-programmed. Almost every page of the novel is steeped in negative vocabulary. On a global scale, the whole society of the world state is an abomination · science gone mad · in most people's eyes, at any rate.

Surely any utopia can go terribly wrong? One thinks of Christianity; the Soviet experiment; The French Revolution; and Pol Pot. All ideas and ideals get horribly perverted by power and its pursuit. So what horrors might we be letting ourselves in for in a global species-project to abolish the biological substrates of malaise?

There is an important distinction to be drawn here. In a future civilisation where aversive experience is genetically impossible · forbidden not by social diktat but because its biochemical substrates are absent · then the notion of what it means for anything to go wrong will be different from today. If this innovative usage is to be adopted, then we're dealing with a separate and currently ill-defined · if not mystical · concept; and we run a risk of conflating the two senses. For if we are incapable of aversive experience, then the notion of things going wrong with our lives · or anyone else's · doesn't apply in any but a Pickwickian sense. "Going wrong" and "being terrible" as we understand such concepts today are inseparable from the textures of nastiness in which they had their origin. Their simple transposition to the Post-Darwinian Era doesn't work.

Perhaps functional analogues of things going wrong will indeed apply · even in a secular biological heaven where the phenomenology of nastiness has been wiped out. So the idea isn't entirely fanciful. For the foreseeable future, functional analogues of phenomenal pain will be needed in early transhumans no less than in silicon robots to alert their bodies to noxious tissue damage etc. Also, functional analogues of "things going wrong", at least in one sense, are needed to produce great science and technology, so that acuity of critical judgement is maintained; uncontrolled euphoric mania is not a recipe for scientific genius in even the most high-octane supermind. Yet directly or indirectly, the very notion of "going wrong" in the contemporary sense seems bound up with a distinctive and unpleasant phenomenology of consciousness: a deficiency of well-being, not a surfeit.

This doesn't stop us today from dreaming up scenarios of blissed-out utopias which strike us as distasteful · or even nightmarish · when contemplated through the lens of our own darkened minds. This is because chemically-unenriched consciousness is a medium which corrupts anything that it seeks to express. The medium is not the message; but it leaves its signature indelibly upon it. We may imagine future worlds in which there is no great art, no real spirituality, no true humanity, no personal growth through life-enriching traumas and tragedies, etc. We may conjure up notional future worlds, too, whose belief-systems rest on a false metaphysic: e.g. an ideal theocracy · is it a real utopia if it transpires there's no God? But it's hard to escape the conclusion that "ill-effects" from which no one ever suffers are ontological flights of fancy. The spectre of happy dystopias may trouble some of us today rather than strike us as a contradiction on terms. But like Huxley's Brave New World, they are fantasies born of the very pathology that they to seek warn us against.

This is not to deny that the transition to the new Post-Darwinian Era will be stressful and conflict-ridden. We learn from the Controller that the same was true of Brave New World · civilisation as we know it today was destroyed in the Nine Years' War. One hopes, on rather limited evidence, that the birth-pangs of the new genetic order will be less traumatic. But the supposition that a society predicated on universal bliss engineered by science is inherently wrong · as Huxley wants us to believe · rests on obscure metaphysics as well as questionable ethics. Sin is a concept best left to medieval theologians.

C o n s u m e r i s t

Brave New World is a "Fordist" utopia based on production and consumption. It would seem, nonetheless, that there is no mandatory workplace drug testing for soma; if there were, its detection would presumably be encouraged. In our own society, taking drugs may compromise a person's workrole. Procuring illicit drugs may divert the user from an orthodox consumer lifestyle. This is because the immediate rewards to be gained from even trashy recreational euphorants are more intense than the buzz derived from acquiring more consumer fripperies. In BNW, however, the production and consumption of manufactured goods is (somehow) harmoniously integrated with a lifestyle of drugs and sex. Its inhabitants are given no time for spiritual contemplation. Solitude is discouraged. The utopians are purposely kept occupied and focused on working for yet more consumption: "No leisure from pleasure".

Is this our destiny too?

Almost certainly not. Productivist visions of paradise are unrealistic if they don't incorporate an all-important genomic revolution in hedonic engineering. Beyond a bare subsistence minimum, there is no inherent positive long-term correlation between wealth and happiness. Windfalls and spending sprees do typically bring short-term highs. Yet they don't subvert the hedonic treadmill of inhibitory feedback mechanisms in the brain. Each of us tends to have a hedonic setpoint about which our "well-being" fluctuates. That setpoint is hard to recalibrate over a lifetime without pharmacological or genetic intervention. Interlocking neurotransmitter systems in the CNS have been selected to embody both short- and long-term negative feedback loops. They are usually efficient. Unless they are chemically subverted, such mechanisms stop most of us from being contented - or clinically depressed - for very long. The endless cycle of ups and downs - our own private re-enactment of the myth of Sisyphus - is an "adaptation" that helps selfish genes to leave more copies of themselves; in Nature, alas, the restless malcontents genetically out-compete happy lotus-eaters. It's an adaptation that won't go away just by messing around with our external environment.

This is in no way to deny that our descendants will be temperamentally ecstatic. They may well consume lots of material goods too. Yet their well-being cannot depend on an unbridled orgy of personal consumption. It depends on dismantling the hedonic treadmill itself.

So what sort of scenario can we expect? If we opt for genetically pre-programmed bliss, just what, if anything, is our marvellous well-being likely to focus on?

First, in a mature IT society, the harnessing of psychopharmacology and biotechnology to ubiquitous virtual reality software gives scope for unlimited good experiences for everyone. Any sensory experience one wants, any experiential manifold one can imagine, any narrative structure one desires, can be far better realised in VR than in outmoded conceptions of Real Life.

At present, society is based on the assumption that goods and services - and the good experiences they can generate - are a finite scarce resource. But ubiquitous VR can generate (in effect) infinite abundance. An IT society supersedes the old zero-sum paradigm and Fordist mass-manufacture. It rewrites the orthodox laws of market economics. The ability of immersive multi-modal VR to make one - depending on the software title one opts for - Lord Of Creation, Casanova The Insatiable etc puts an entire universe at one's disposal. This can involve owning "trillions of dollars", heaps of "status goods", and unlimited wealth and resources - in today's archaic terminology. In fact one will be able to have all the material goods one wants, and any virtual world one wants - and it can all seem as "unvirtual" as one desires. A few centuries hence, we may rapidly take im material opulence for granted. And this virtual cornucopia won't be the prerogative of a tiny elite. Information isn't like that. Nor will it depend on masses of toiling workers. Information isn't like that either. If we want

it, nanotechnology promises old-fashioned abundance all round, both inside and outside synthetic VR.

Nanotechnology is not magic. The self-replicating molecular robots it will spawn are probably more distant than their enthusiasts suppose, perhaps by several decades. We may have to wait a century or more before nanorobots can get to work remoulding the cosmos to make it a home worth living in and call our own. Details of how they'll be programmed, how they'll navigate, how they'll be powered, how they'll locate all the atoms they reconfigure, etc. are notoriously sketchy. But the fact remains: back in the boring old mind-independent world, applied nanoscience will deliver material superabundance beyond measure.

For the most part, admittedly, vast material opulence may not be needed thanks to VR. This is because we can all have the option of living in immersive designer-paradises of our own choosing. At first, our customised virtual worlds may merely ape and augment organic VR. But the classical prototype of an egocentric virtual world is parochial and horribly restrictive; the body-image it gives us to work with, for instance, is pretty shoddy and flawed by built-in obsolescence. Unprogrammed organic VR can be hatefully cruel as well. Nature's genetic algorithms are nastily written and very badly coded indeed. Ultimately, artificial VR may effectively supersede its organic ancestor no less (in)completely than classical macroscopic worlds emerged from their quantum substrate. The transition is conceivable. Whether it will happen, and to what extent, we simply don't know.

Heady stuff. But is it sociologically plausible? Doesn't such prophecy just assume a naive technological determinism? For it might be countered that synthetic drugs and VR experiences – whether interactive or solipsistic, deeply soulful or fantasy wish-fulfilment – will always be second-rate shadows of their organically-grown predecessors. Why will we want them? After a while, won't we get bored? For surely Real Life is better.

On the contrary, drugs plus VR can potentially yield a heightened sense of verisimilitude, and exhilarating excitement. Virtual worlds can potentially seem more real, more lifelike, more intense, and more compelling than the lame definitions of reality on offer today. The experience of this-is-real – like all our waking or dreaming consciousness – comprises a series of neurochemical events in the CNS like any other. It can be amped-up or toned-down. Reality does not admit of degrees, but our sense of it certainly does. Tone, channel and volume controls will be at our disposal. But once we've chosen what we like, then the authentic taste of paradise is indeed addictive.

Thus in an important sense Brave New World is wrong. Our descendants may "consume" software, genetic enhancements and designer drugs. But the future lies in bits and bytes, not as workers engaged in factory mass-production or cast as victims of a consumer society. In some ways, BNW is prescient science fiction – uncannily prophetic of advances in genetic engineering and cloning. But in other ways, its depiction of life in centuries to come is backward-looking and quaint. Our attempts to envision distant eras always are. The future will be unrecognisably better.

Loveless

BNW is an essentially loveless society. Both romantic love and love of family are taboo. The family itself has been abolished throughout the civilised world. We learn, however, that the priggish Director of Hatcheries and Conditioning was guilty of an indiscretion with a Betaminus when visiting the Reservation twenty years ago. When John the Savage falls on his knees and greets him as "my father", the director puts his hands over his ears. In vain, he tries to shut out the obscene word. He is embarrassed. Publicly humiliated, he then flees the room. Pantomime scenes like this – amusing but fanciful – contribute to our sense that a regime of universal well-being would entail our losing something precious. Utopian happiness, we are led to believe, is built on sacrifice: the loss of love, science, art and religion. Authentic paradise-engineering, by contrast, can enhance them all, not a bad payoff.

In BNW, romantic love is strongly discouraged as well. Brave new worlders are conditioned to be sexually promiscuous. 'Everyone belongs to everyone else.' Rather than touting the joys of sexual liberation, Huxley seeks to show how sexual promiscuity cheapens love; it doesn't express it. The Savage fancies lovely Lenina no less than she fancies him. But he loves her too. He feels having sex would dishonour her. So when the poor woman expresses her desire to have sex with him, she gets treated as though she were a prostitute.

Thus Huxley doesn't offer a sympathetic exploration of the possibility that prudery and sexual guilt has soured more lives than sex. In a true utopia, the counterparts of John and Lenina will enjoy fantastic love-making, undying mutual admiration, and live together happily ever after.

Fantastical? The misapplication of science? No. It's just one technically feasible biological option. In the light of what we do to those we love today, it would be a kinder option too. At any rate, we should be free to choose.

The utopians have no such choice. And they aren't merely personally unloved. They aren't individually respected either. Ageing has been abolished, but when the utopians die quickly, not through a long process of senescence their bodies are recycled as useful sources of phosphorus. Thus Brave New World is a grotesque parody of a utilitarian society in both a practical as well as a philosophical sense.

This is all good knockabout stuff. The problem is that some of it has been taken seriously.

Science is usually portrayed as dehumanising. Brave New World epitomises this fear. 'The more we understand the world, the more it seems completely pointless' (Steven Weinberg). Certainly science can seem chilling when conceived in the abstract as a metaphysical world-picture. We may seem to find ourselves living in a universe with all the human meaning stripped out: participants in a soulless dance of molecules, or harmonics of pointlessly wagging superstrings. Nature seems loveless and indifferent to our lives. What right have we to be happy?

Yet what right have we to sneeze? If suffering has been medically eradicated, does happiness have to be justified any more than the colour green or the taste of peppermint? Is there some deep metaphysical sense in which we ought to be weighed down by the momentous gravity of the human predicament?

Only if it will do anyone any good. The evidence is lacking. Paradise-engineering, by contrast, can deliver an enchanted pleasure-garden of otherworldly delights for everyone. Providentially, the application of biotechnology offers us the unprecedented prospect of enhancing our humanity and the biological capacity for spiritual experience. When genetically-enriched, our pursuit of such delights won't be an escape from some inner sense of futility, a gnawing existential angst which disfigures so many lives at present. Quite the opposite: life will feel self-intimately wonderful. Wholesale genetic-rewrites tweaked by rational drug-design give us the chance to enhance willpower and motivation. We'll be able to enjoy a hugely greater sense of purpose in our lives than our characteristically malfunctioning dopamine systems allow today. Moreover this transformation of the living world, and eventually of the whole cosmos, into a heavenly meaning-steeped nirvana will in no way be 'unnatural'. It is simply a disguised consequence of the laws of physics playing themselves out.

And, conceivably, it will be a loving world. Until now, selection pressure has ensured we're cursed with a genome that leaves us mostly as callous brutes, albeit brutes with intermittently honourable intentions. We are selfish in the popular as well as the technical genetic sense. Love and affection are often strained even among friends and relatives. The quasi-psychopathic indifference we feel toward most other creatures on the planet is a by-product of selfish DNA. Sociobiology allied to evolutionary psychology shows how genetic

dispositions to conflict are latent in every relationship that isn't between genetically identical clones. Such potential conflicts frequently erupt in overt form. The cost is immense suffering and sometimes suicidal anguish.

This isn't to deny that love is real. But its contemporary wellsprings have been poisoned from the outset. Only the sort of love that helps selfish DNA to leave more copies of itself · which enable it to "maximise its inclusive fitness" · can presently flourish. It is fleeting, inconstant, and shaped by cruelly arbitrary criteria of physical appearance which serve as badges of reproductive potential. If we value it, love should be rescued from the genes that have recruited and perverted the states which mediate its expression in blind pursuit of reproductive success. Contra Brave New World, love is not biologically inconsistent with lasting happiness.

This is because good genes and good drugs allow us, potentially, to love everyone more deeply, more empathetically and more sustainably than has ever been possible before. Indeed, there is no fundamental biological reason why the human genome can't be rewritten to allow everyone to be "in" love with everyone else · if we should so choose. But simply loving each other will be miraculous enough, and will probably suffice. An empty religious piety can be transformed into a biological reality.

Love is versatile; so we needn't turn ourselves into celibate angels either. True love does not entail that we become disembodied souls communing with each other all day. "Promiscuous" sex doesn't have to be loveless. Bonobos ("pygmy chimps") are a case in point; they would appreciate a "Solidarity Service" rather better than we do. When sexual guilt and jealousy · a pervasive disorder of serotonin function · are cured, then bed-hopping will no longer be as morally reckless as it is today. Better still, designer love-philtres and smarter sex-drugs can transform our concept of intimacy. Today's ill-educated fumbings will seem inept by comparison. Sensualists may opt for whole-body orgasms of a frequency, duration and variety that transcends the limp foreplay of their natural ancestors. Whether the sexual adventures of our descendants will be mainly auto-erotic, interpersonal, or take guises we can't currently imagine is a topic for another night.

Profound love of many forms · both of oneself and all others · is at least as feasible as the impersonal emotional wasteland occupied by Huxley's utopians.

Gene-Splicers Versus Glue-Sniffers **The molecular biology of paradise**

The prospect of a lifetime of genetically-engineered sublimity strikes some contemporary Savages as no less appalling than getting high with drugs. The traditional conception of living happily-ever-after in Heaven probably hasn't thrilled them unduly either; but the unusual eminence of its Author has discouraged overt criticism. In any event, the consensus seems to be that God's PR representatives did a poor job in selling The Other Place to his acolytes. Today, many people find the idea of winning the national lottery far more appealing; and in fairness, it probably offers better odds. Possibly His representatives on earth should have tried harder to make Heaven sound more appealing. One worries that an eternity spent worshipping Him might begin to pall.

But the Death Of God, or at least his discreet departure to a backstage role, shouldn't mean we're doomed to abandon any notion of heaven, and certainly not on earth. Suffering, whether it's irksome or too terrible for words, doesn't have to be part of life at all.

Unfortunately, the proposal that aversive experience should be eliminated in toto via biotechnology tends to find itself assimilated to two stereotypes:

1. The image of an intra-cranially self-stimulating rat. Its degraded frenzy of lever-pressing is eventually followed by death from inanition and self-neglect.

2 Soma and visions of Brave New World.

And just as during much of the Twentieth Century, any plea for greater social justice could be successfully damned as Communist, likewise today, any strategy to eradicate suffering is likely to be condemned in similar reactionary terms: either wirehead hedonism or revamped Brave New World. This response is not just facile and simplistic. If it gains currency, the result is morally catastrophic.

Of course, the abolitionist issue rarely arises. Typically, universal bliss is still more or less unthinkingly dismissed as technically impossible. Insofar as the prospect is even contemplated · grudgingly · it is usually assumed that the new regime would be underwritten day-by-day with drugs or, more crudely, electrodes in the pleasure-centres.

These techniques have their uses. Yet in the medium-to-long-term, stopgaps won't be enough. All use of psychoactive drugs may be conceived as an attempt to correct something pathological with one's state of consciousness. There's something deeply wrong with our brains. If what we had now was OK, we wouldn't try to change it. But it isn't, so we do. Mature biological psychiatry will recognise inadequate bliss as a pandemic form of mental ill-health: good for selfish DNA in the ancestral environment where the adaptation arose, but bad for its throwaway vehicles, notably us. The whole gamut of behavioural conditioning, socio-economic reform, talk-therapies · and even euphoriant superdrugs · are just palliatives, not cures, for a festering global illness. Its existence demands a global eradication program, not idle philosophical manifestos and scientific belles lettres.

But one does one's best. The ideological obstacles to genetically pre-programmed mental super-health are actually more daunting than the technical challenges. To be cured, hypo-hedonia must be recognised as a primarily genetic deficiency disorder. Designer mood-brighteners and anti-anxiety agents to alleviate it are sometimes branded "lifestyle-drugs"; but this is to trivialise a serious medical condition which must be corrected at source. Happily, our hereditary neuropsychiatric disorder is likely to become extinct within a few generations. Aversive experience, and the poisonous metabolic pathways that mediate its textures, will become physiologically impossible once the genes coding its neural substrates have been eliminated. We won't miss its corrupting effect when it's gone.

In the medium-term, the functional equivalent of aversive experience can help animate us instead. Late in the Third Millennium and beyond, its functional successors may be expressed as gradients of majestic well-being. On this scenario, our descendants will enjoy a civilisation based on pleasure-gradients: whether steep or shallow, we simply don't know. Such a global species-project does not have the desperate moral urgency of eliminating the phenomenon of Darwinian pain · both "mental" and "physical", human and non-human alike. Abolishing raw nastiness · sometimes vile beyond belief · remains the overriding ethical priority. One doesn't have to be an outright negative utilitarian to acknowledge that getting rid of agony takes moral precedence over maximising pleasure. But both genetic fundamentalists and gung'ho advocates of Better Living Through Chemistry today agree on one crucial issue. There is no sense in sustaining a legacy of mood-darkening metabolic pathways out of superstitious deference to our savage past.

When Bernard Marx tells the Savage he will try to secure permission for him and his mother to visit the Other Place, John is initially pleased and excited. Echoing Miranda in *The Tempest*, he exclaims: "O brave new world that has such people in it." Heavy irony. Like innocent Miranda, he is eager to embrace a way of life he neither knows nor understands. And of course he comes unstuck. Yet if we swallow such fancy literary conceits, then ultimately the joke is on us. It is only funny in the sense there are "jokes" about Auschwitz. For it is Huxley who neither knows nor understands the glory of what lies ahead. A utopian society in which we are sublimely happy will be far better than we can presently imagine, not worse. And it is we, trapped in the emotional squalor of late-Darwinian antiquity, who

neither know nor understand the lives of the god-like super-beings we are destined to become.